LESSON TOPIC 3.9

HAZARDOUS MATERIAL IDENTIFCATION AND SPILL RESPONSE

ENABLING OBJECTIVES

- Select the capabilities and operating characteristics of the DC HAZMAT equipment and systems
- Describe the function and responsibilities of the repair station leader in the HAZMAT program
- Describe the use and contents of the Hazardous Material Spill Response kit

Hazardous Material (HM)

- Any material that, because of its quantity, concentration, or physical/chemical characteristics, may pose a substantial hazard to human health or the environment when purposefully released or accidentally spilled.

Hazardous Material (HM)

- Includes:
  - Flammable / combustible
  - Toxic materials
  - Corrosive materials
  - Oxidizing materials
  - Aerosol containers
  - Compressed gases

Hazardous Material (HM)

- Does Not Include:
  - Ammunition, weapons
  - Explosives, explosive actuated devices
  - Propellants
  - Pyrotechnics
  - Chemical/biological warfare materials
  - Medical/pharmaceutical supplies, medical waste, bulk fuels
  - Radioactive materials

Hazardous Material (HM)

- Hazardous Waste (HW) - Any discarded material (liquid, solid, or gas) which is defined as hazardous material.
  - Includes acids & bases

MATERIAL SAFETY DATA SHEETS

(MSDS)

Material Safety Data Sheets (MSDS)

- Technical bulletins containing information about HM such as composition, chemical and physical characteristics, health and safety hazards, and precautions for safe handling and use.
- Required for every HM
- HM/HW coordinator maintains list of MSDSs

Material Safety Data Sheets (MSDS)

- All MSDSs for forces afloat are assigned a number by the Naval Safety Center.
- All personnel must read, understand, and be trained on the dangers and precautions contained in MSDSs before they use HM.

Hazardous Material (HM)

- **Responsibilities**
  - Commanding Officer
    - Overall responsible for HM/HW program
    - A commissioned officer can be appointed in writing, as HM/HW coordinator
    - Approves open purchase items for hazardous material.

Hazardous Material (HM)

- **Responsibilities**
  - HM/HW Coordinator
    - Manager of HM/HW program.
    - Ensures supervisors are trained in proper marking, handling, stowage, usage, spill response, disposal procedures relative to HM/HW, and the use of Material Safety Data Sheets.
    - Identifies locations and quantities of HM/HW.
    - Maintains list of Material Safety Data Sheets.

Hazardous Material (HM)

- **Responsibilities**
  - Safety Officer
    - Conducts spot checks for improper stowage and use of HM/HW.
    - Evaluates HM/HW program for compliance and effectiveness.

Hazardous Material (HM)

- **Responsibilities**
  - Medical Department
    - Assists in training of assigned personnel regarding health information and personal protective equipment required for the HM they are using.
    - Maintains a file of Material Safety Data Sheets.
    - Provides medical assistance at HM spill

Hazardous Material (HM)

- **Responsibilities**
  - Division Officers
    - Ensures proper marking when HM are transferred into other containers.
    - Ensures approved personal protective clothing and equipment are available and personnel are trained in proper use and maintenance.
    - Prior to using or handling any HM/HW, ensures personnel have read, understand, and been trained on the MSDS for that material.

Hazardous Material (HM)

- **Responsibilities - Division Officer (Cont'd)**
  - Ensures Material Safety Data Sheets are available for each HM used in their work center.
  - Indoctrinates personnel periodically in handling, using, storing, responding to spills, and disposing of HM/HW.
  - Maintains records of stock levels, locations and usage of HM.

Hazardous Material (HM)

- **Responsibilities**
  - Damage Control Assistant
    - Supervises damage control teams in combating spill clean-up of HM/HW.
    - Provides training to divisions regarding reporting, handling and clean-up of HM/HW spills as requested.

Hazardous Material (HM)

- **Responsibilities**
  - Work Center Supervisors
    - Trains work center personnel in the use of MSDS.
    - Ensures that prior to using HM, personnel have read and understand applicable MSDS and that proper protective equipment is used.
    - Inspects locations where HM/HW is stored or used:
    - Quarterly for other HM storage areas.

Hazardous Material (HM)

- **Responsibilities**
  - Repair Party Leaders
    - Maintain a list of locations and a file of material Safety Data Sheets in the RPL Notebook for each HM/HW stored in your repair station area of responsibility.
    - Assist the DCA in training repair parties in combating spills of HM/HW.

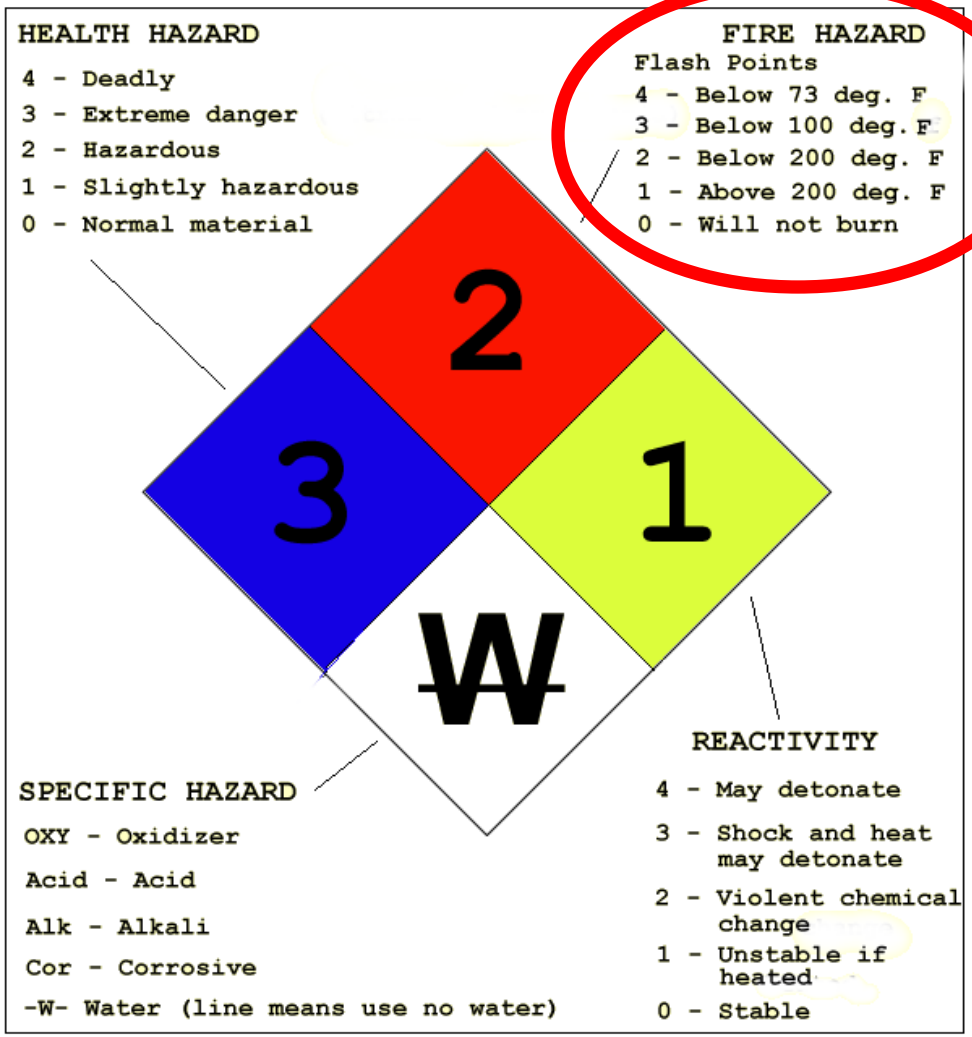
Hazardous Material (HM)

- **Responsibilities**
  - All Hands
    - Returned to appropriate stowage upon completion of use
    - Follow MSDS
    - Collect and segregate any waste for proper disposal.
    - Report any spills
    - Turn in stock piled HM/HW

Hazardous Material (HM)

- Identification of hazardous Material/Waste
  - Manufacturer's labels - identify material name, manufacturer's name and address, and nature of the hazard.

National Fire Protection Association Label (NFPA)



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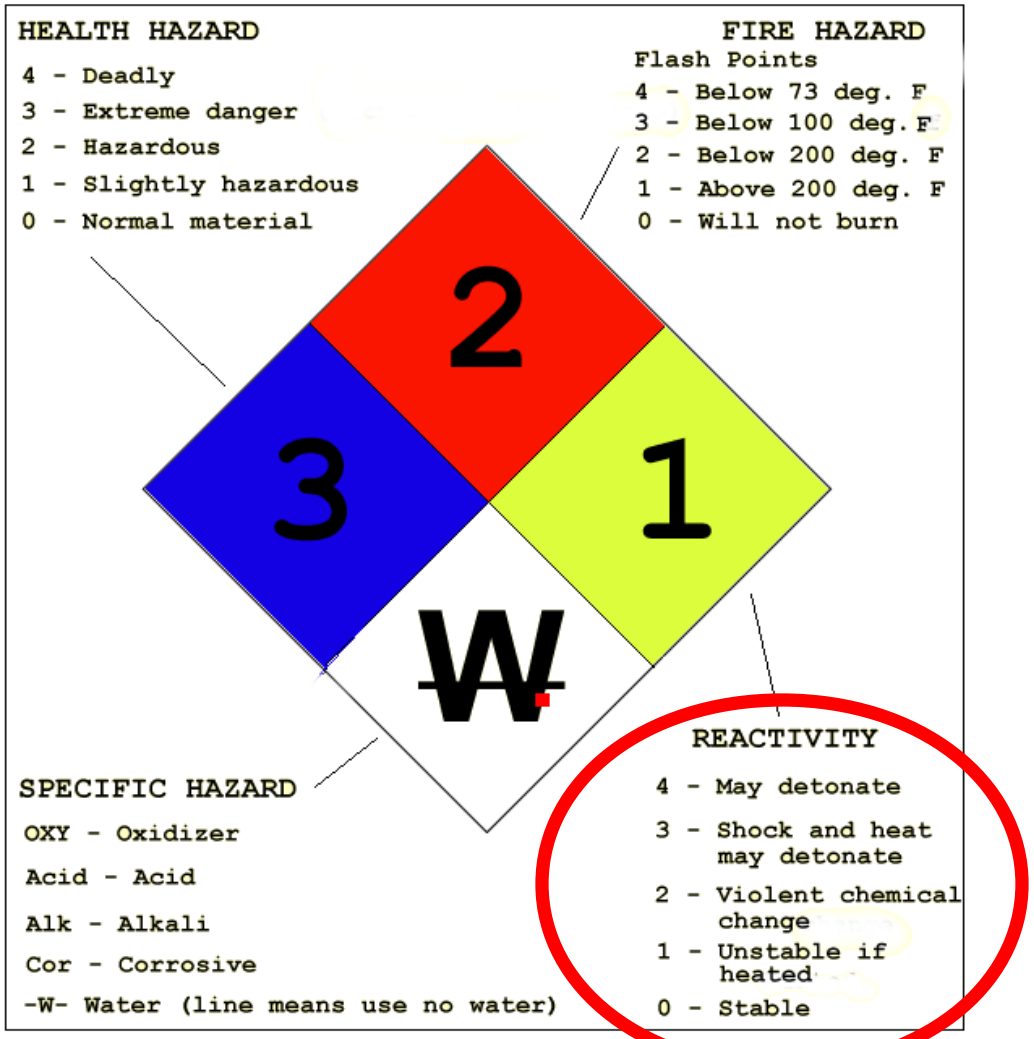

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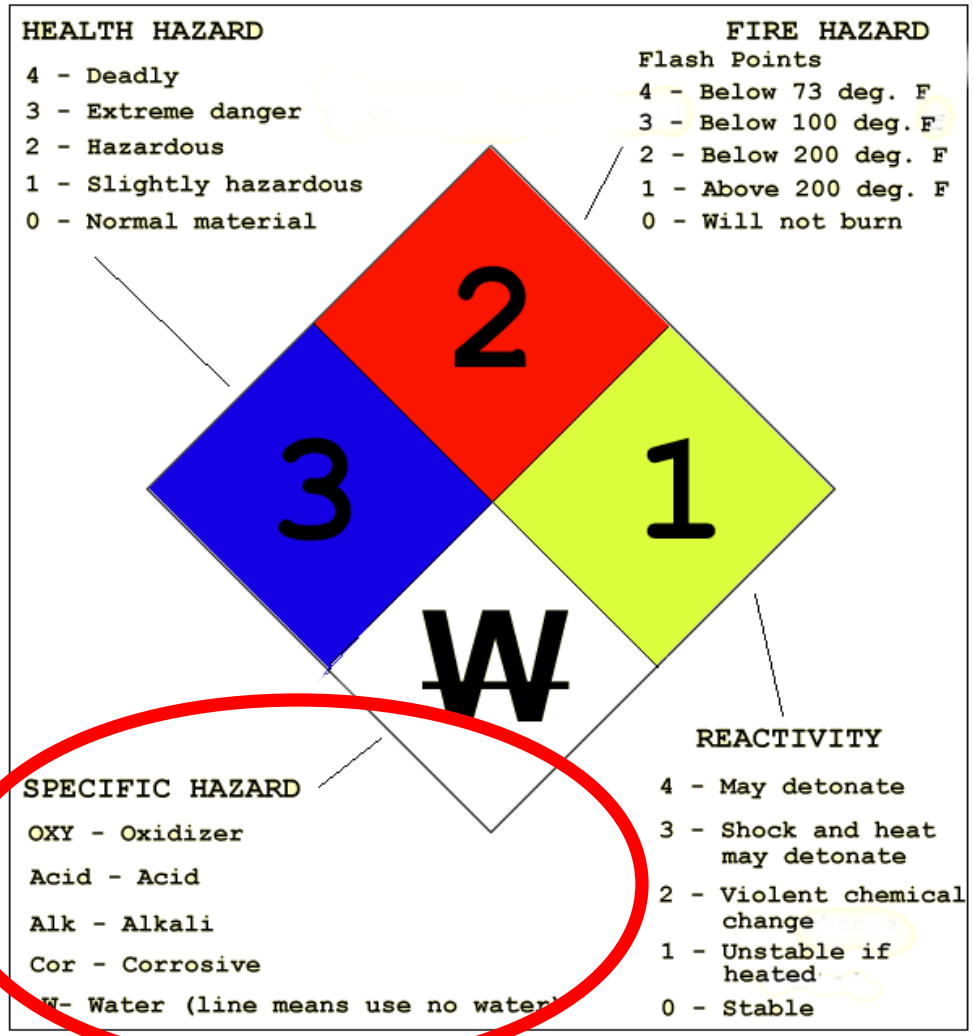

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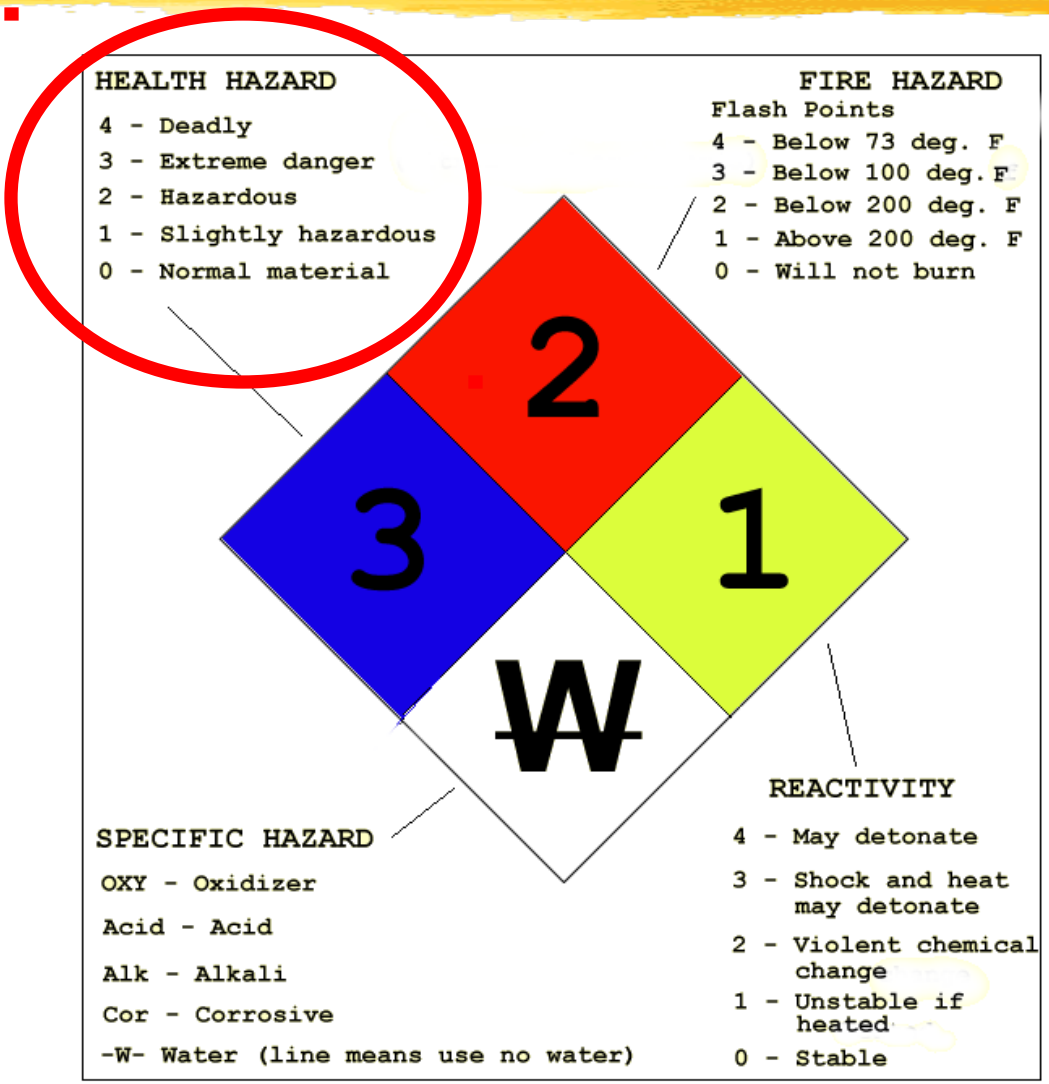


Hazardous Material Spill Response Procedures

Hazardous Material Spill Response Procedures

Spill discovery

- Verbally report IMMEDIATELY to supervisory personnel and the OOD / CDO.
  - Time of spill discovery
  - Location
  - Identification of material
  - Behavior of material (reactions observed)
  - Source of spill (tank, container)

Hazardous Material Spill Response Procedures

Spill discovery

- Personnel in vicinity of spill
- Volume of spill
- Anticipated movement of spill
- Label information

Hazardous Material Spill Response Procedures

- Only trained personnel shall respond to a hazardous material / waste spill due to the extremely dangerous nature of many materials used aboard ship.

Hazardous Material Spill Response Procedures

Initiation of action by spill response team

- Evacuate all personnel
- Cordon off affected area
- Arrange first aid for injured personnel.
- Do not enter contaminated area until necessary protective clothing has been determined.
- Establish communications

Hazardous Material Spill Response Procedures

Initiation of action by spill response team

- Close drains, ventilation ducts, doors, and hatches
- Disperse gases or vapors to weather by using ventilation

NOTE: GFE will check area for oxygen, LEL and toxicity.

Hazardous Material Spill Response Procedures

Initiation of action by spill response team

- Eliminate any fire/explosion hazards such as electrical equipment, incompatible materials, and open flames.
  - Use standard firefighting methods compatible with material used.
- Use explosion-proof fans.

Hazardous Material Spill Response Procedures

Clean-up and decontamination

- When directed by person in charge, employ spill clean-up methods recommended on the MSDS.
- After clean-up, thoroughly ventilate space.
- Reusable protective clothing shall be thoroughly decontaminated and otherwise maintained and returned to stowage.

Hazardous Material Spill Response Procedures

Disposal of contaminated materials

- All non-reusable clean-up materials are to be placed in impermeable containers, stored and disposed of as hazardous waste.

Hazardous Material Spill Response Procedures

Certification of safe re-entry

- Spaces affected shall be certified safe by the GFE before normal operations are resumed in that space.

Hazardous Material Spill Response Procedures

Follow-up reports

- OOD/CDO submits spill report to HM/HW coordinator.
  - Copy of report will be filed by the Safety Officer.

Hazardous Material Spill Response Kit

Hazardous Material Spill Response Kit

- **Locker**
  - Stores contents
- Thirty gallon steel drum
  - Stores contents of kit
- Sorbent socks
  - Used to contain a liquid spill
- Sorbent pillows
  - used to soak up a liquid spill

Hazardous Material Spill Response Kit

- 9-inch tongs
  - Pick up saturated pillows/socks
- Scrub brush and dust pan
  - Clean up spills of solid HM
- Litmus Paper
  - Determination of the acidity or alkalinity of spills

Hazardous Material Spill Response Kit

- Squeegee with 12-inch blade
  - Large spills
- Polyethylene sealing tape (black)
  - Place around gloves and boot openings to seal against the exterior atmosphere.
- Polyethylene bags
  - Disposal of saturated socks

Hazardous Material Spill Response Kit

- Disposable coveralls
- Disposable aprons
- Chemical protective goggles
- Butyle rubber gloves
- Nitrile rubber gloves

Hazardous Material Spill Response Kit

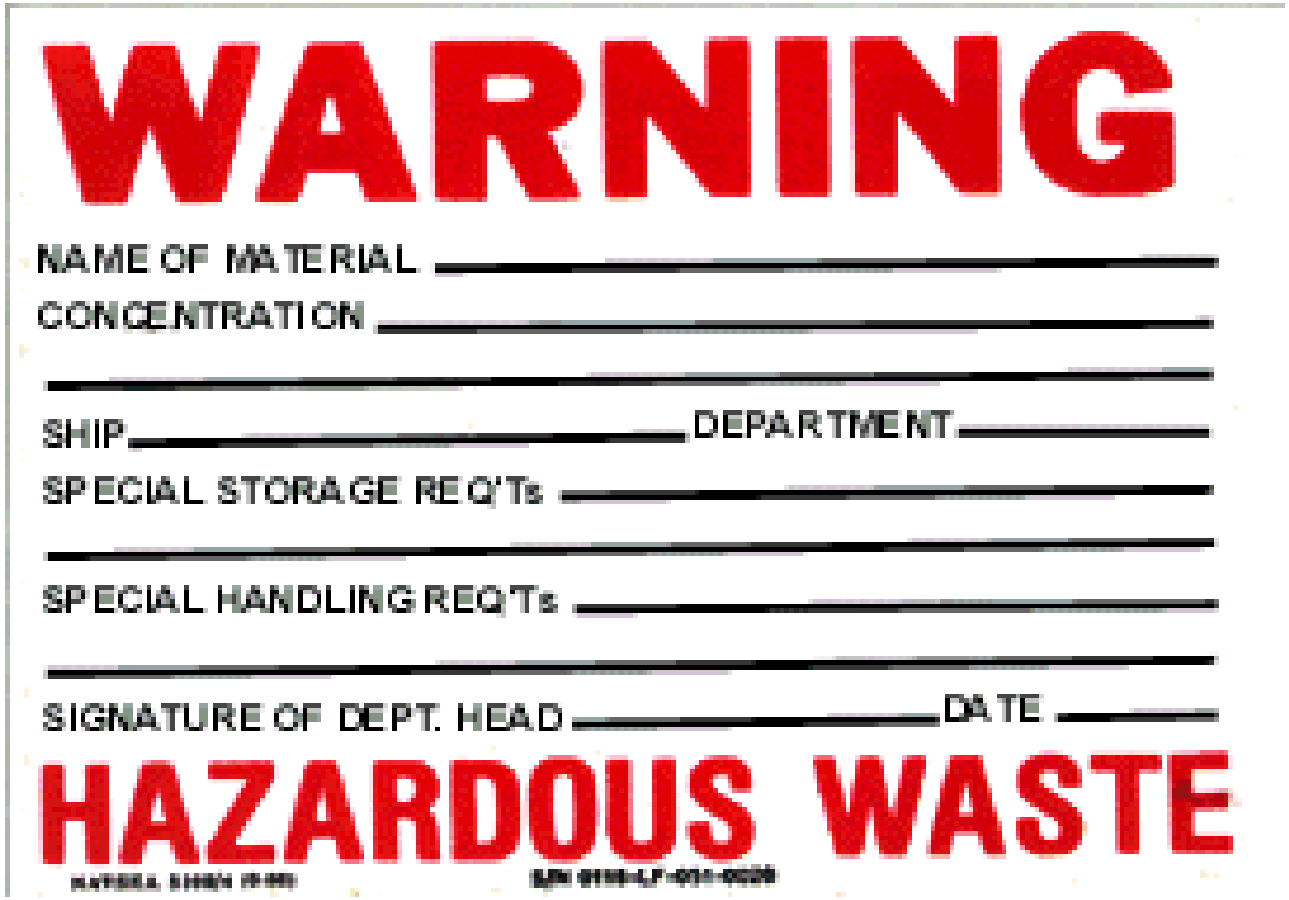
- Surgical gloves

NOTE: Surgical gloves are to be wor
the butyle or nitrile gloves.

- Organic vapor/acid respirators
- Ammonia/methylamine disposable respirators

Hazardous Material Spill Response Kit

- Hazardous waste labels



Hazardous Material Spill Response Kit

Polychlorinated Biphenyls (PCB)

CAUTION
CONTAINS
PCBs
(Polychlorinated Biphenyls)
A toxic environmental contaminant requiring special handling and disposal in accordance wiith U.S. Envirnmental Protection Agency Regulations 40 CFR 761 - For Disposal Information contact the nearest U.S. E.P.A. Office.
In case of accident or spill, call toll free the U.S. Coast Guard National Response Center: 800-424-8802
Also contact:
Tel. No:

Hazardous Material Spill Response Kit

- Department of Transportation (DOT) Emergency Response Handbook.
  - Identify response procedures for hazmat spills.

REVIEW AND SUMMARY

Review and Summary

- Hazardous Material (HM)
- Material Safety Data Sheets (MSDS)
- Hazardous Material Spill Response Kit
- Hazardous Material Spill Response Procedures

THE END